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ASSESS THE STRESS: IDENTIFYING PSYCHOSOCIAL RISK TO OPTIMIZE PERINATAL OUTCOMES IN MILITARY GRAVIDS

by

Debra L. Arabia, RNC, BSN

An Applied Project Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Susan Mattson, RN, PhD, Chair

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May 2002

ABSTRACT

Pregnancy is a dynamic event that results in physiological, psychological, sociological, and developmental changes (Logsdon, 2000; Norbeck & Tilden, 1983). This can lead to stress, which directly and indirectly affects maternal and fetal well being.

Complications occur in approximately 50% of all pregnancies of healthy adult women in North America (DaCosta, Brender, & Larouche, 1998). Despite medical advances, the incidence of pregnancy complications has changed little since the 1960's (DaCosta, Dritsa, Larouche, & Brender, 2000). Preterm birth and low birth weight are the two most recognized complications of maternal stress in pregnancy, and are the number one cause of neonatal mortality and morbidity (Blecher, 2001).

Although extensive research has been conducted over the past 30 years validating the link between psychosocial factors and perinatal outcomes, little attention is given to these in the perinatal setting. Obstetrical providers are still relying on biomedical and demographic information alone to determine perinatal risk.

Women in the military are a vulnerable population at risk for antepartum, intrapartum, and postpartum complications (Magann & Nolan, 1991; Rosen & Evans, 2000). The lack of social support due to geographic separation from family, friends, and often times, partners, seems to be contributory to their risk. This is significant since studies have shown that social support can buffer the detrimental effects of stress.

The purpose of the proposed innovation is twofold. One, to heighten military provider awareness of the impact stress and psychosocial variables have on perinatal outcomes. Two, to incorporate psychosocial risk assessment and strategies to counter those risks throughout routine prenatal care.

The proposed innovation will be a one-day continuing education program to 50-60 OB/GYN physicians, residents, nurse practitioners, clinical nurses, medical technicians, and inpatient nurse managers providing care at Wilford Hall Medical Center, San Antonio, Texas. The innovation will continue over 12 months by utilizing The

Prenatal Psychosocial Profile (PPP) at least three times over the course of the pregnancy to assess stress, social support, and self-esteem. Formal documentation and intervention strategies will be readily accessible to providers.

Evaluation of the program will include pre- and post- attitudinal questionnaires along with a program evaluation. A follow-up questionnaire will be administered at one year to all healthcare personnel providing OB/GYN services to evaluate the acceptance of psychosocial evaluation and input for the decision making process to accept, modify, or adopt the innovation. Evaluation will also include review of prenatal records at three, six, and twelve months to determine if the PPP is being utilized, psychosocial risks are being addressed, and appropriate interventions are being recommended.

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Introduction

Pregnancy is a dynamic event that involves many physiological, psychological, sociological, and developmental changes (Logsdon, 2000; Norbeck & Tilden, 1983). It represents a paradigm shift for the family (Malnory, 1996) who must adjust to changes in income and expenditure, home and social life, parenting roles, and self-image. Lederman (1996) has done extensive research in the area of psychosocial adaptation in pregnancy and has developed seven dimensions of maternal development: Acceptance of pregnancy, identification with a motherhood role, relationship to the mother and to the husband or partner, preparation for labor, prenatal fear of loss of control in labor, and prenatal fear of loss of self-esteem in labor (see Appendix A for details of each dimension). Any difficulty experienced in any of these dimensions can cause problems with adapting to the pregnancy and the motherhood role, which could lead to difficulties in the prenatal and postpartum period.

Pregnancy naturally results in physiological and psychological stress for women. However, an inordinate amount of stress could be detrimental. Psychoneuroimmunology (PNI) takes a holistic approach to examining interactions between the neurological, endocrine, and immune systems, with psychological status, and the influence of these on health outcomes (Ruiz & Pearson, 1999). This is pertinent for pregnancy because the physiological response resulting from stress impacts maternal and fetal outcomes. At each stage of development, the fetus uses cues from its environment to decide how best to construct itself within the parameters of its genes (Blecher, 2001).

Epinephrine, norepinephrine and cortisol are recognized as stress-related biochemical measures (Lederman, 1995; 1996). Chronic activation of these hormones can lead to arterial vasoconstriction, which negatively impacts placental perfusion and oxygenation essential for optimal fetal development (Blecher, 2001; Lederman). High levels of epinephrine associated with increased maternal stress have been implicated as a precipitating factor in preterm labor and low birth weight. Evidence is mounting that hormones associated with stress are what set the "placental clock", which determines the length of gestation (Blecher, 2001; March of Dimes

1999; Mundell, 2001). Cortisol affects the immune response and can cause immunosuppression leading to infection (Lederman, 1995).

Exposure to stress in utero has been shown to affect an infant's temperament, neurobehavioral development, and IQ (Blecher; Wolkind, 1981) and places infants at greater risk for complications such as chronic lung disease (Blecher; Gray & Dean, 1991). Evidence is mounting that babies who experience stress in utero are more likely to develop chronic health problems later in life, such as heart disease, hypertension, and diabetes (Blecher).

Stress can be indirectly related to poor birth outcomes by leading to unhealthy behaviors such as poor nutrition, smoking, alcohol, illicit or inappropriate drug use (Da Costa, Brender, & Larouche, 1998; Da Costa, Dritsa, Larouche, & Brender, 2000; March of Dimes, 1999; Walker, Cooney, & Riggs, 1999; Wolkind, 1981), depression, sedentary lifestyles, and withdrawal from family and friends. Another variable affecting outcomes is whether the pregnancy is planned or unplanned, wanted or unwanted (Sable & Wilkinson, 2000; Wolkind, 1981).

Interactions between stressful life events, maternal behavior and personal characteristics, in combination with an inadequate social support system can lead to uteroplacental problems and preterm labor (Molfese, 1989; Rothberg & Lits, 1991). Social support has been associated with a woman's adjustment to pregnancy, and with the prevention of negative perinatal outcomes. Women with positive social support systems have been shown to seek prenatal care, intend to breastfeed, have easier labors, deliver newborns with higher apgar scores and birth weights, and have a decreased incidence of postpartum depression (Logsdon, 2000).

Psychosocial assessment during pregnancy has the potential to impact nine Healthy People 2010 objectives either directly or indirectly. These objectives target improvement in maternal and neonatal health, and promote healthy perinatal outcomes. Seven of these objectives have specified baseline data and target goals, whereas two objectives are in the developmental stages (see Appendix B). Two objectives focus on improving neonatal death and infant mortality. One objective is to reduce the total of low birth weight (<2500 grams) and very low birth weight (<1500 grams) infants from a 1998 baseline of 7.6% and 1.4% to a target of 5.0%

and 0.9% respectively. The other objective is to reduce the total of preterm births (<37 weeks gestation) from a 1998 baseline of 11.6% to a target of 7.6%. Approximately 67% of low birth weight infants and 98% of very low birth weight infants are born preterm. Although the increase in preterm deliveries and low/very low birth weights are attributable to the increase in multiple gestation, preterm birth is associated with many modifiable risk factors such as alcohol, tobacco, drugs, and/or increased exposure to psychosocial stress (U.S. Department of Health and Human Services & Public Health Service, 2000).

Problem Identification

Complications occur in about 50% of all pregnancies in healthy adult, North American women (Da Costa, et al., 1998). Despite rapid medical advances improving health outcomes, the incidence of pregnancy complications, including low birth weight, has changed very little since the 1960's (Da Costa, et al., 2000). The traditional examination of biomedical and demographic risk has proven unsuccessful in identifying all women at high risk for adverse outcomes (Da Costa, et al., 1998; Molfese, et al., 1987). This lack of progress has rallied many researchers to study other correlates of perinatal risk.

Preterm birth and low birth weight are probably the most recognized complications of maternal stress during pregnancy (Blecher, 2001). Low birth weight accounts for 7.1% of all infants born (Lederman, 1995). Infants with low birth weights and very low birth weights are respectively five times and 65 times more likely to die within the first year of life (National Center for Health Statistics, 1997). It is estimated to cost society between $6.4 and $12 billion annually in future lost wages of these infants and their families (Lederman, 1995).

Although extensive research over the past 30 years has supported the link between psychosocial factors and perinatal outcomes, little attention is given to psychosocial assessment in the prenatal setting. Omitting this very important component of a thorough risk assessment can be due to the lack of education and understanding of multiple factors that contribute to perinatal outcomes. Psychosocial factors such as high stress levels, negative health behaviors, and the lack of prenatal care can negatively affect birth outcomes (Wadhwa, Sandman, Porto,

Dunkel-Schetter, & Garite, 1993).

Women in the military share certain protective characteristics thought to reduce the risk of adverse perinatal outcomes such as good physical health, a minimum of a high school education, and free access to prenatal care (Rosen & Evans, 2000). However, active duty women represent a high-risk population for antepartum, intrapartum, and postpartum complications (Magann & Nolan, 1991; Rosen & Evans) including neonatal complications such as early gestation and low birth weight causing long term sequelae for their children.

Military dependents do not undergo the same screening as the active duty population, but in general, they are expected to have a lower incidence of serious medical disorders when compared with a civilian obstetric population. This, too, is due to free access to healthcare, accessibility to food and housing, a relatively stable income, and more positive lifestyle behaviors such as reduced incidence of alcohol and drug addiction. Whether a woman is active duty or a military dependent, the transient lifestyle that accompanies military life, limits access to traditional support systems such as family and longtime friends. Many times the husband or partner is also unavailable due to military deployments or the nature of their job.

Purpose of Innovation

The purpose of the proposed innovation is twofold. One, to heighten military provider awareness of the impact stress and psychosocial variables have on perinatal outcomes. Two, to incorporate psychosocial risk assessment and strategies to counter those risks throughout routine prenatal care.

Innovation Description

Theoretical Framework

The theoretical framework chosen as the foundation for the concepts included in the innovation is The Neuman Systems Model, developed by Betty Neuman. This model takes a holistic approach to the client including physiological, psychological, sociological, cultural, developmental, and spiritual variables (George, 1995). Two major components of the model are stress and the reaction to stress, and is dependent upon human variables, basic structure and

energy resources, lines of resistance, and lines of defense (see Appendix C for Neuman's depicted model and Appendix D for a detailed definition of terms). Stressors are intra-, inter-, or extrapersonal in nature and occur from internal, external, and created environments. The client is viewed as an open, dynamic system that seeks to regulate itself on an illness-wellness continuum. Interventions utilized to retain, attain, and maintain system balance is through primary, secondary, and tertiary prevention (George).

These tiers of prevention will be used within the innovation as a guideline for introducing interventions that are associated with the level of psychosocial risk, and are based on Neuman's Format for Prevention as Intervention as cited in George (1995) (see Appendix E). Once the client is assessed for psychosocial risk in the prenatal setting, education and intervention can be done accordingly to attain, maintain, or retain optimal maternal and fetal wellness.

Proposed Innovation

The proposed innovation begins by offering a one-day continuing education program to 50-60 OB/GYN physicians, residents, nurse practitioners, clinical nurses, medical technicians, and inpatient nurse managers providing care at Wilford Hall Medical Center (WHMC), Lackland Air Force Base, San Antonio, Texas. The OB/GYN clinic will close for patient care for the training day to encourage maximum participation. Continuing nursing and medical education contact hours will be awarded for added motivation to attend. The event will be sponsored by Savage Laboratories, the makers of StrongStart prenatal vitamins, who will provide a luncheon and product samples to all participants.

The program content will include: A review of the physiological effects stress has on the body, more specifically the pregnant woman and her unborn child; the direct and indirect impact stress has on perinatal outcomes; a review of the literature and research studies that support the incorporation of psychosocial assessments into clinical practice; the protective benefits social support has on outcomes despite heightened stress levels; the cultural variations to consider when assessing women; the introduction of the Prenatal Psychosocial Profile (PPP) as a tool for psychosocial risk assessment; and the process for introducing assessment and strategies for

reducing the risk into routine prenatal care at WHMC. Information will be disseminated through lectures, case studies, and discussions.

Upon completion of the program, the second phase of the innovation will begin. In this phase, the PPP will be introduced during the New Moms OB Orientation class to identify those at psychosocial risk. The PPP will be self-administered two more times during the second and third trimester of pregnancy in the OB waiting area during routine prenatal care visits. Providers will be responsible for reviewing the PPP and addressing psychosocial needs or concerns as necessary. The Provider will be responsible for documenting the woman's risk on the problem list in the prenatal record, and offering appropriate resources and/or referrals for those with identified risk. Risk status may fluctuate dependent on the woman's unique situation, so it is essential to continually address psychosocial variables and support systems during each client encounter.

Research Support

Psychosocial Variables

Hedegaard, Henriksen, Sabroe, and Secher (1993) did a prospective cohort study in Denmark with a large sample size of 5872 women to evaluate the association between psychological distress and preterm delivery while adjusting for other determinants of preterm delivery. Based on the results, it was concluded that psychological distress in late pregnancy is associated with an increased risk for preterm delivery.

Lobel, DeVincent, Kaminer, and Meyer (2000) examined the impact of maternal stress and an optimistic disposition on birth outcomes. In their sample of 129 medically high risk women, after controlling for the effects of risk and ethnicity, prenatal maternal stress was not statistically significant; however, women who were least optimistic had infants weighing significantly less. These women tend to view their lives as more stressful. This perception can lead to unhealthy behaviors and chronic stress, which may be underlying factors contributing to negative birth outcomes.

Smilkstein, Helper-Lucas, Ashworth, Montano, and Pagel (1984) conducted a pilot study

of 93 gravid women to predict pregnancy outcomes based on application of a biopsychosocial model. Their findings validated that psychosocial risk assessment alone, or in conjunction with biomedical risk assessment, can significantly improve the identification of women who may experience pregnancy complications (Smilkstein et al.) Wadhwa, Sandman, Porto, Dunkel-Schetter, and Garite (1993) concur with this finding in their prospective study of 90 sociodemographically homogenous women. It was determined that maternal stress factors are significantly associated with infant birth weight (odds ratio 1.32) and gestational age at birth, independent of biomedical risk.

A prospective study conducted by Da Costa, et al. (1998) examined the impact of psychosocial and lifestyle variables on pregnancy complications. A relationship was found between psychosocial and lifestyle measures and subsequent gestational and intrapartum complications. High levels of state-anxiety and daily hassles were linked to gestational complications. This was a significant finding because women in this group experienced no complications during gestation.

Sable and Wilkinson (2000) addressed the impact of perceived stress, major life events, and pregnancy attitudes on low birth weights in a case-control study of 2378 mothers. A stepwise logistic regression model was used to control for study variables. The results revealed that very low birth weight is one-half times greater if the mother perceived that she "almost always" felt stress during her pregnancy. Recommendations based on the study were that interventions including routine assessment of their perceived stress and pregnancy attitudes have the possibility of improving perinatal outcomes.

Gupton, Heaman, and Cheung (2001) set out to determine the relationship between biomedical, psychosocial, and demographic risk factors and women's perceptions of pregnancy risk in a descriptive, correlational study. A comparison was made between women with and without complications in their pregnancies. They concluded that women with complications perceived their risks for adverse outcomes as greater. Both biomedical and psychosocial factors influence their risk perception and therefore must be addressed during prenatal care.

Molfese et al. (1987) evaluated a multivariate model focusing on the influence of maternal anxiety, depression, and stress on pregnancy outcomes as mediated by attitudes toward pregnancy, internal versus external locus of control, and perception of available social support. It included pregnancy complications in the model to account for the interrelationships of variables during pregnancy that affect pregnancy outcomes. Due to the fact that multivariate analyses revealed stronger predictive results than simple correlations between variables, it was determined that these variables do not function independently of one another.

Social Support

Norwood (1996) has created the Social Support Apgar (SSA) as an instrument to assess perceptions of adequacy of social support in pregnancy. Testing the tool in three different studies obtained Cronbach's alphas of .88 - .93. Results revealed a positive relationship between SSA scores and positive perinatal outcomes and a negative relationship between SSA scores and increased life stress. The results support the validity of the SSA, and further confirm the notion that social support can affect perinatal outcomes even in the presence of stress.

A randomized, controlled study was performed by Rothberg and Lits (1991) to address the benefits of counseling and support for mothers suffering from moderate to severe stress in pregnancy and its effect on birth weight. Their findings support the notion that psychosocial support has a significant effect on birth weight. Social support has been shown to moderate the effects of stress on perinatal outcomes; however, the perception of support is a more important indicator of positive outcomes than the amount or presence of support (Molfese, et al., 1987).

Norbeck & Tilden (1983) conducted a prospective, multivariate study that found significant effects from life stress, social support and their interaction accounted for 20.8% of the variance in pregnancy complications, 5.7% in labor complications, and 9.1% of infant complications. The results support the goal of early identification and intervention to reduce the detrimental outcomes of increased life stress, low social support, and emotional disequilibrium.

Norbeck & Anderson (1989) addressed the multivariate effects of life stress, social support, and anxiety during the second and third trimesters of pregnancy. Social support was

found to buffer the negative effects of anxiety, and the combination of high life stress and low social support were associated with the highest states of anxiety (Norbeck & Anderson). This study is important because it showed that second trimester measures of these psychosocial variables were indicative of their levels over the course of the pregnancy, and if assessment and intervention occurs early in pregnancy, there is a potential to improve perinatal outcomes.

The Association for Women's Health, Obstetric, and Neonatal Nurses (AWHONN) has recognized the impact of psychosocial correlates associated with perinatal outcomes and has recently published a monologue that addresses issues of social support for pregnant and postpartum women (Logsdon, 2000). This monologue provides information on the link between social support and health status in pregnancy, literature on social support during the perinatal and postpartum period, and guidelines for support interventions by healthcare professionals. It also addresses the importance of cultural competence when assessing social support, and offers several instruments used to assess it clinically.

Logsdon (2000) recommends that stressing the link between social support and health for pregnant women in lectures and assigned readings, healthcare workers can come to appreciate this concept and be more prudent about interventions and documentation.

Military Populations

Magann and Nolan (1991) conducted a study on an active duty military population suggesting that occupational physical activity and psychosocial stress are risk factors for adverse perinatal outcomes. Based on their study of active duty women (n=331) matched for age and gravidity with a control group of dependent wives of active-duty personnel (n=218), there was a statistically significant difference in the cesarean rate ($p < .001$), transfers for preterm complications ($p < .0001$), pregnancy induced hypertension syndromes ($p < .01$), and intrauterine growth restriction ($p < .05$) when compared with the control group (Magann & Nolan). A conclusion was formed that despite adjustments in physical activity, elimination of environmental hazards, ready access to obstetric care, and reduction of psychosocial stressors in the workplace, active duty pregnant women represent a high-risk population (Magann & Nolan).

This study substantiates the need for looking at women holistically with the understanding that numerous variables effect the outcomes of a pregnancy. More specifically, women in the military are particularly vulnerable, and alternatives to current prenatal care practices must be considered to identify those at risk for adverse outcomes, and offer interventions that can reduce or eliminate the risk.

Rosen and Evans (2000), in a more recent study, addressed demographic and psychosocial risk factors for preterm delivery in a pregnant active duty population (n=269). None of the demographic or psychosocial variables in the study were significantly associated with low birth weight. However, due to the small number of low birth weight infants (n=14) in the study, valid statistical comparison is difficult. Both marital status (odds ratio=2.1, p= 0.008) and the number of medical conditions (odds ratio=1.6, p=0.04) were significant predictors of preterm delivery (Rosen & Evans), marital status more so than medical conditions. The lack of spousal support may be contributory to the risk of preterm delivery. Family support was not measured in the study, but the nurturing and assistance normally provided by families is also assumed to be lacking related to geographic separation, further contributing to pregnancy complications (Tam, 1998).

Continuing Education Programs

The basic premise of continuing education programs is based on the assumption that this type of education positively influences practice, thereby improving the health and well being of the population. However, many univariant studies have reported conflicting results, and the quantitative benefits of continuing education programs have remained unclear (Waddell, 1992). In order to rectify this inconsistency, Waddell (1992) conducted a meta-analysis from a total of 34 studies to generate an overall statistic of interest-effect size. With an overall effect size of 0.73, conclusions were made with greater confidence that continuing nursing education positively contributes to professional nursing practice.

Continuing education has evolved through the recognition that change in clinical practice not only involves the training program, but also the nature of the change, which includes the

desirability and ease of adopting a new behavior, and the openness of the social system to change (Peden, Rose, & Smith, 1992). In order to facilitate acceptance of an innovation, personnel need to communicate prior to the continuing education program, and greater administrative support is needed during the innovation (Kiener & Hentschel, 1992). Supervisor involvement in a pre- and post- assessment evaluation can lay the foundation for the success of an implementation by influencing the social system (Peden et al.).

Adult learners are autonomous, self-directed, goal-oriented, and relevancy-oriented. Rationalization of how the continuing education will help them reach their intended goals must be provided. A connection must be made between learning and their experience base, and it must be of value to them. The adult learner must be provided the motivation to learn (Lieb, 2000). The factor that serves as the source of motivation for the proposed innovation involves social welfare, which is the genuine concern to improve the ability to serve patients, and improve their quality of life.

The Prenatal Psychosocial Profile

The Prenatal Psychosocial Profile (PPP) is a research and clinical tool used to assess psychosocial risk in pregnancy. It is a composite of the Rosenberg Self-Esteem Scale, the Support Behaviors Inventory, and a newly developed measurement of stress selected from the Daily Hassles Scale (Curry, Campbell, & Christian, 1994). The PPP contains four subscales: stress, support of partner, support of others, and self-esteem. Stress is measured on a 4-point Likert scale ranging from 1 (no stress) to 4 (severe stress). Support is measured on a 6-point Likert scale ranging from 1 (very dissatisfied) to 6 (very satisfied). Self-esteem is measured on a 4-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree). The stress and support scales are scored as written with the higher scores indicating higher stress and higher support. Six items on the self-esteem scale need to be reverse scored so that a higher score indicates higher self-esteem.

Curry, Burton, and Fields (1998) summarized five studies of culturally diverse women (n=3444) from urban and rural backgrounds within the United States, and normative data were

reported. Internal consistency of the subscales was supported by Cronbach's alphas ranging from .73 to .96. Test-retest correlations for the four subscales ranged from .78 to .84. Factor analysis supported independence of the subscales because all items loaded on the appropriate scales and minimally on others (Curry et al.). The PPP is a valid and reliable measure for Caucasian and African American women; however it is questionable whether the tool is appropriate for Native American women, and is known to be inappropriate for use with traditional Hispanic women who do not incorporate self-esteem as a concept for themselves.

The PPP is a brief, comprehensive, clinically relevant method for assessing psychosocial risk in pregnancy. It requires approximately five minutes to administer and can be done over the telephone, face-to-face, or self-completion.

Implementation

Conceptual Framework

Planned change is defined as a "conscious, rational, and deliberate process for bringing about change and innovation, which tends to make these changes more acceptable and beneficial to those involved" (CURN Project, 1983, p. 3). Lewin's freezing model is the change theory selected to facilitate successful implementation of the proposed innovation. In this model, change occurs in three stages: the unfreezing stage, where the present situation is defined and awareness of the necessity for change is communicated; the moving stage, where the innovation is implemented; and the refreezing stage, where innovation stability occurs as a result of acceptance and internalization of the change (Walsh & Bernhard, 1998).

During the proposed innovation, the unfreezing stage will occur in two steps. In the first step, upper level faculty within OB/GYN services at WHMC will be briefed on the need for altering current prenatal care practices to positively impact perinatal outcomes. In the second step, psychosocial risk awareness and assessment strategies will be introduced to all outpatient OB/GYN clinic personnel and selected OB/GYN inpatient personnel during the one-day Assess the Stress continuing education program.

The moving stage will also consist of two steps. The first step includes staff participation

in the continuing education program. The second step is the utilization of the Prenatal Psychosocial Profile (PPP) (see Appendix F) and assessment strategies with clients during routine prenatal care.

The refreezing stage will transpire after commencement of the proposed innovation. It will involve consistent use of the PPP, and appropriate interventions including resources and referrals in clinical practice. Thorough documentation in the prenatal records addressing the interventions and the impact on the clients are essential in quantifying the benefit of the innovation.

Activities

Plans for implementation will begin six months prior to the program, and follow-up will continue for an additional twelve months after the program. This is a feasible timeline for accomplishing all that is necessary to develop the innovation and evaluate it adequately. All of the activities can be easily accomplished during a normal duty day with limited disruption. The only anticipated limitation is that personnel in the military are constantly transferring in and out of the facility, so sustaining motivation and continued support from those involved may be challenging. The upside of this is that military personnel are very adaptable and open for change due to their frequently changing job positions and relocations.

The following activities required for the proposed innovation include the following:

Six months prior:

1. Discuss the need for the innovation with the OB/GYN flight commander, department chiefs, and the inpatient and outpatient OB/GYN nurse managers to ensure maximum support for the project.
2. Select a committee including the coordinator, a nurse practitioner; two assistant coordinators, a nurse practitioner and the chief resident; and the chief physician, all of whom will speak during the continuing education program.
3. Distribute the proposal, timeline for implementation, program agenda (see Appendix G), and budget (see Appendix H) to the committee for review.

4. Submit the PPP and the Psychosocial Risk Identification Worksheet (PRIW) (see Appendix I) to the Forms Committee for approval and assignment of a WHMC form number to ensure its incorporation into the clients' permanent records.

Four months prior:

1. Submit package for CEU approval.
2. Reserve the WHMC auditorium and audiovisual equipment for the program.
3. Contact Savage Laboratories, the makers of StrongStart prenatal vitamin (see Appendix J), to sponsor a luncheon and donate samples (pens and tablets) for use during the conference.

Two months prior:

1. Block appointments in the OB/GYN clinic for the one-day program.
2. Announce the training day to applicable faculty via e-mails and posters.
3. Compile a list of those planning to attend the program.

One week prior:

1. Send all forms/handouts to Military Rapid Reproduction for copying.
2. Compile participant folders with all necessary paperwork.

Day of:

1. Hold the continuing education offering.
2. Distribute CEU/CME certificates (see Appendix K).

One week after:

1. Educate nurses and medical technicians on the inpatient unit who did not attend the program about the new process for assessing clients for pregnancy risks.
2. Familiarize personnel with the new forms included in the prenatal record.
3. Encourage staff to facilitate discussion of psychosocial concerns when clients are admitted to the hospital.

Two weeks after and ongoing:

1. Initiate the use of the PPP at the weekly New Moms Orientation, the class attended to

begin prenatal care at WHMC. The optimal gestation at intake is 6-12 weeks.

2. Examine the PPPs and complete the PRIW.
3. Repeat the PPP during routine prenatal care visits at approximately 20-24 weeks and again at 32-36 weeks.
4. Identify clients at psychosocial risk. Interventions can be guided through the use of the Psychosocial Risk Assessment Algorithm (PRAA) (see Appendix L).
5. Address psychosocial risks on the problem list in the prenatal record and document in the notes. Continually assess these risks and update the problem list as needed.

Evaluation

Once the innovation is implemented, it is paramount to conduct an evaluation. Holzemer (1992) defines evaluation as "a process of description and judgment, conducted for the purpose of determining program effectiveness and/or improving a program itself", p. 174.

The evaluation will begin during the innovation itself by receiving attitudinal feedback from the participants pertaining to the content of the program. At the same time, a program evaluation will be accomplished after the program in order to collect data about the content, the speakers, the facility, and any suggestions for future offerings. Evaluation will continue over twelve months following the program at specified intervals to ensure proper implementation of the innovation.

The program coordinator and the two assistant coordinators will evaluate the innovation. In order to maintain continuity throughout the evaluation process, personnel were selected based on the assumption that they will be assigned to WHMC for at least two years. Evaluation will be accomplished during the duty day; therefore, it is expected to be very feasible.

The following activities will be used to evaluate the proposed innovation:

Day of:

1. Administer the pre-evaluation questionnaire (see Appendix M) prior to the program.
2. Collect the post-evaluation questionnaire (see Appendix N) and the program evaluation from each participant at the conclusion of the program (see Appendix O).

Three months after:

1. Review ten prenatal records to see if the PPPs and PRIWs are in the charts, filled out completely, and psychosocial risks are identified and documented.

Six months after:

1. Review twenty-five prenatal records to ensure consistent use of the PPP and PRIW, identified risks are documented on the problem list and in the record, and evaluation of outcomes of the interventions are documented.

Twelve months after:

1. Evaluate retrospectively fifty inpatient records to determine whether there was a greater identification of risk for adverse perinatal outcomes.
2. Distribute a questionnaire to WHMC OB/GYN clinic and inpatient personnel to measure the perceived value of assessing psychosocial risk (see Appendix P).

Decision Making

The decision making process will ensue over the course of twelve months. Data collected during the program will be reviewed to determine the attitudes and motivations of the participants. This will be helpful in anticipating the receptiveness and potential success of the innovation at the onset. Based on chart reviews at the allotted intervals, decisions on the need for further education will be made. The final decision to adopt, modify, or reject the innovation will not be made until the full twelve months of implementation. Consideration will be given to the cost in time and resources, the ease of the operation, and staff morale. Again, the program and assistant coordinators will be involved with data collection and compilation of results for the evaluation and final decision making process. Although time-consuming, this thorough evaluation is necessary to fully appreciate the effects of the innovation on the outcome measures.

The decision to adopt will be based on data that indicates the new practice is better than the old (CURN Project, 1983). The decision to adopt the proposed innovation will be dependent on the following:

1. 90% of all prenatal records audited will contain the Prenatal Psychosocial Profile

(PPP), and further documentation of perinatal risk, reassessment of risk, and applicable resource and referral recommendations.

2. There will be a 50% increase in risk identification for adverse perinatal outcomes post- innovation.

The decision to modify will be based on the need for change in a specific process that should not influence the actual outcomes observed during the innovation implementation (CURN Project, 1983). The decision to modify the proposed innovation will be dependent on the following:

1. The PPP does not accurately capture the psychosocial risk in the military population; however the innovation is perceived as worthwhile. In this instance, a new instrument will be obtained or created based on the specific need of the population.
2. Forms such as the Prenatal Risk Identification Worksheet, need to be altered.
3. The process itself for determining psychosocial risk needs to be adjusted.

The decision to reject will be based on the instance the evaluation data does not indicate the new practice produced the expected results (CURN Project, 1983). The decision to reject the proposed innovation will be dependent on the following:

1. There is little to no difference in psychosocial risk identification, and perinatal outcomes are unaffected by the innovation.
2. There is a negative cost in time, ease of operation, staff morale, and patient satisfaction that far outweighs the benefits of the innovation.

Once the determination is made to continue implementing the innovation, education of incoming staff will be important so that the heightened awareness of the necessity of psychosocial risk assessment can continue. A report will be disseminated to all those involved with OB/GYN services to communicate the results and offer positive reinforcement for continued practice change. At this point, the innovation can be extended to other military hospitals so that the benefits of psychosocial assessment can be reaped military wide.

Summary

In summary, pregnancy causes a paradigm shift that is influenced by numerous variables. Stress is an inevitable occurrence in pregnancy; however, it must be recognized to reduce maternal and fetal adverse outcomes. Current prenatal practice has failed to identify many women at risk for complications using biomedical and demographic information. By taking a holistic approach to the client assessing physiological, psychological, sociological, cultural, developmental, and spiritual areas for potential risk, it is possible to increase identification of those at risk, and intervene in an attempt to improve perinatal outcomes. Initial psychosocial assessments of pregnant women, along with interventions that address the areas causing risk, have the potential to improve pregnancy outcomes (Sable & Wilkinson 2000).

The proposed innovation is aimed to increase provider awareness of the importance of psychosocial risk assessment throughout prenatal care in an effort to increase the identification of those at risk. The Prenatal Psychosocial Profile is introduced as a quick, comprehensive tool to assess the stress, social support and level of self-esteem in gravid women with minimal disruption to the normal prenatal routine.

Professional education and continuing education has shown to be effective to improve client care by updating knowledge, skills and attitudes (Holzemer, 1992). The success of the intervention program is dependent on a comprehensive understanding of the interplay between psychosocial and medical risks (Wadhwa, et al., 1993).

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APPENDIX A

SEVEN DIMENSIONS OF MATERNAL DEVELOPMENT

Seven Dimensions of Maternal Development (Lederman, 1996)

1. Acceptance of Pregnancy focuses on the gravid's response to the pregnancy, rather than response to the baby. It pertains to enjoyment of pregnancy, tolerance of discomforts, and extent of ambivalence.
2. Identification of a Motherhood Role focuses on the extent to which the gravid looks forward to assuming a motherhood role, and anticipates her gratification from caring for her baby.
3. Relationship with Mother is the closeness, support, and empathy between the gravid and her mother.
4. Relationship with Husband/Partner is mutuality, support, and communication patterns in the relationship.
5. Preparation for Labor assesses the extent to which the gravid feels informed and prepared to cope with the events of labor.
6. Fear of Pain, Helplessness, and Loss of Control assesses the ability to deal with the stress and pain in labor, and the gravid's self-estimated ability to maintain control and cope with the events of labor.
7. Concern for Well-Being of Self and Baby addresses concerns the gravid may have about possible complications of labor that could result in injury to herself or her baby.

APPENDIX B

POTENTIAL HEALTHY PEOPLE 2010 OBJECTIVES AFFECTED BY PSYCHOSOCIAL RISK IN PREGNANCY

Potential Healthy People 2010 Objectives Affected by Psychosocial Risk in Pregnancy

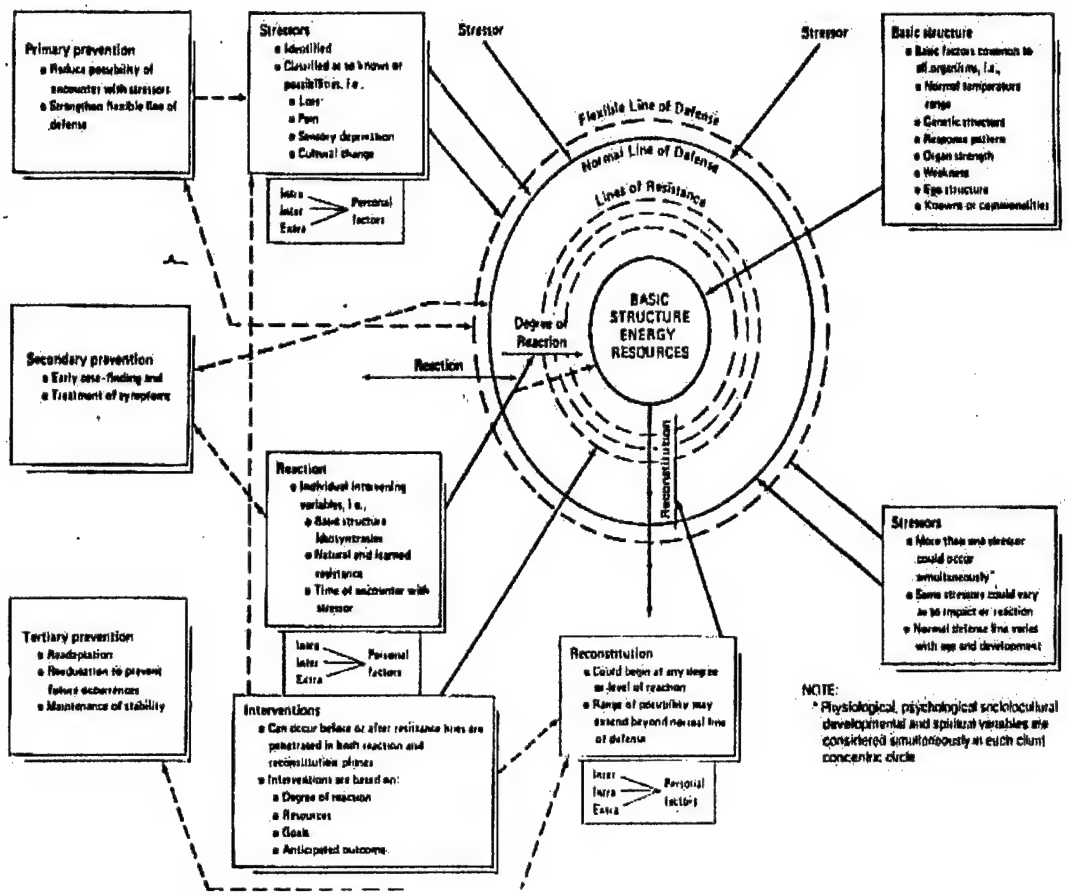
(U.S. Department of Health and Human Services & Public Health Service, 2000)

Objective	1998 Baseline	2010 Target
16-5: Reduce maternal illness and complications related to pregnancy (per 100)	31.2	24
16-6: Increase the proportion of pregnant women who receive early and adequate prenatal care in the first trimester	8.3%	9%
Early and adequate prenatal care	74%	90%
16-7: Increase the proportion of pregnant women who attend a series of prepared childbirth classes	(Developmental stages)	
16-9: Reduce cesarean births among low-risk women (full-term, singleton, vertex presentation)	18%	15%
Prior cesarean birth	72%	63%
16-10: Reduction in low/very low birth weight (per 100)		
Low birth weight	7.6	5.0
Very low birth weight	1.4	0.9
16-11: Reduction in preterm births (per 100)		
Total preterm births	11.6	7.6
Live births 32-36 weeks	9.6	6.4
Live births less than 32 weeks	2.0	1.1
16-12: Increase the proportion of mothers who achieve a recommended weight gain during their pregnancies	(Developmental stages)	
16-17: Increase abstinence from alcohol, cigarettes, & illicit drugs among pregnant women (per 100)		
Alcohol	86	94
Binge drinking	99	100
Cigarette smoking	87	99
Illicit drugs	98	100
16-19: Increase the proportion of mothers whom breastfeed their babies		
In the early postpartum period	64%	75%
At 6 months	29%	50%
At 1 year	16%	25%

APPENDIX C

THE NEUMAN SYSTEMS MODEL

The Neuman Systems Model



Original diagram copyright 1970 by Betty Neuman.

APPENDIX D

DEFINITION OF TERMS IN THE NEUMAN SYSTEMS MODEL

Definition of Terms in The Neuman Systems Model (as cited in George, 1995)

1. System stability is the amount of energy available exceeds what the client uses.
2. Basic structure is comprised of common survival factors such as system variables, genetic factors, and strengths and weaknesses of the system parts.
3. Physiological variables are the structures and functions of the body.
4. Psychological variables are mental processes and relationships.
5. Sociocultural variables are system functions related to social and cultural expectations, and activities.
6. Developmental variables are related to the development of the system over the lifespan.
7. Spiritual variables are the influence of spiritual beliefs.
8. Stressors are stimuli that produce tensions and potentially cause system instability.
9. Intrapersonal stressors are those that occur within the client system.
10. Interpersonal stressors are those that occur outside, but proximal to the client system.
11. Extrapersonal stressors also occur outside and at a distance from the client system.
12. The normal line of defense is the usual system stability over time and is considered the baseline for determining wellness for the client.
13. The line of resistance protects the basic structure and is activated when the normal line of defense is invaded by environmental stressors.
14. The flexible line of defense is the outer boundary and initial response, or protection, of the system to stressors.
15. Primary prevention occurs before the system reacts to a stressor, and includes health promotion.
16. Secondary prevention occurs after the system reacts to a stressor, and the focus is on the treatment of symptoms.
17. Tertiary prevention occurs after the system has been successfully treated in secondary prevention, and focuses on maintaining wellness.

APPENDIX E

FORMAT FOR PREVENTION AS INTERVENTION FOR PSYCHOSOCIAL RISK

Format for Prevention as Intervention for Psychosocial Risk

(based on Neuman's Format for Prevention as Intervention as cited in George, 1995)

Primary Prevention

- Identify and prevent invasion of stressors that threaten the stability of the client.
- Provide the client with information to maintain or fortify the client's existing assets.
- Support the client's positive coping abilities and level of functioning.
- Desensitize/minimize existing potential negative stressors.
- Motivate the client toward optimal wellness.
- Use a multidisciplinary approach to maintain stability.
- Anticipate the need for continuous education and reeducation.
- Use stress as a positive intervention strategy.

Secondary Prevention

- Protect the client's basic structure after invasion of an actual stressor has occurred.
- Mobilize the client's internal/external resources for stability and energy conservation.
- Facilitate purposeful manipulations of the stressors and reactions to the stressors.
- Motivate and empower the client's involvement with her healthcare plan and goals.
- Facilitate appropriate treatments and interventions to eradicate negative stressors.
- Support the client's positive efforts toward wellness.
- Utilize a multidisciplinary approach to optimally address stressors.
- Provide primary prevention interventions as needed.

Tertiary Prevention

- During the recovery phase following treatment of the stressor, assist the client to attain and maintain the maximum level of wellness possible.
- Educate and reeducate the client as necessary.
- Support the client in her pursuit of appropriate goals.
- Coordinate and integrate healthcare resources.
- Provide primary and/or secondary prevention interventions as needed.

APPENDIX F

THE PRENATAL PSYCHOSOCIAL PROFILE (PPP)

APPENDIX F

Assessment of Stress

THE PRENATAL PSYCHOSOCIAL PROFILE (PPP)

Ask women to what extent the following factors are current stressors/hassles. Circle the number corresponding to the appropriate response.

	To what extent are (READ CHOICE) a current stressor/ hassle for you?	No Stress 1	Some Stress 2	Moderate Stress 3	Severe Stress 4
B18A.	Financial worries (e.g., food, shelter, health care, transportation)	1	2	3	4
B18B.	Other money worries (e.g., bills, etc.)	1	2	3	4
B18C.	Problems related to family (partner, children, etc.)	1	2	3	4
B18D.	Having to move, either recently or in the future.	1	2	3	4
B18E.	Recent loss of a loved one	1	2	3	4
B18F.	Current pregnancy	1	2	3	4
B18G.	Current abuse, sexual, emotional, or physical	1	2	3	4
B18H.	Problems with alcohol and/or drugs	1	2	3	4
B18I.	Work problems (e.g., being laid off, etc)	1	2	3	4
B18J.	Problems related to friends	1	2	3	4
B18K.	Feeling generally "overloaded"	1	2	3	4

Assessment of Support

This next set of questions asks how satisfied you are with the amount of support you receive from your partner and/or other people.

B19. First of all, do you have a partner?

☐ 0. No *(ask only about support from others)*

☐ 1. Yes

I will read you a list of statements describing types of support. On a scale of 1 to 6, with 1 being very dissatisfied and 6 being very satisfied, I want you to tell me how satisfied you are with the support you receive from *(your partner/other people)*.

		Partner						Other People					
		Very Dissatisfied					Very Satisfied	Very Dissatisfied					Very Satisfied
B19A.	Shares similar experiences with me	1	2	3	4	5	6	1	2	3	4	5	6
B19B.	Helps keep up my morale	1	2	3	4	5	6	1	2	3	4	5	6
B19C.	Helps me out when I'm in a pinch	1	2	3	4	5	6	1	2	3	4	5	6
B19D.	Shows interest in my daily activities and problems	1	2	3	4	5	6	1	2	3	4	5	6
B19E.	Goes out of his/her way to do special or thoughtful things for me	1	2	3	4	5	6	1	2	3	4	5	6
B19F.	Allows me to talk about things that are very personal and private	1	2	3	4	5	6	1	2	3	4	5	6
B19G.	Lets me know I am appreciated for the things I do for him/her	1	2	3	4	5	6	1	2	3	4	5	6
B19H.	Tolerates my ups and downs and unusual behaviors	1	2	3	4	5	6	1	2	3	4	5	6
B19I.	Takes me seriously when I have concerns	1	2	3	4	5	6	1	2	3	4	5	6
B19J.	Says things that make my situation clearer and easier to understand	1	2	3	4	5	6	1	2	3	4	5	6
B19K.	Lets me know that he/she will be around if I need assistance	1	2	3	4	5	6	1	2	3	4	5	6

If respondent has partner: Now I will read these statements again, and I want you to tell me how satisfied you are with the support you receive from people other than your partner.

Assessment of Self Esteem

We all have some kind of "picture" of ourselves we carry with us. I'm going to read you a list of statements that people have used to describe themselves. I would like you to tell me how much you agree or disagree that this statement describes yourself.

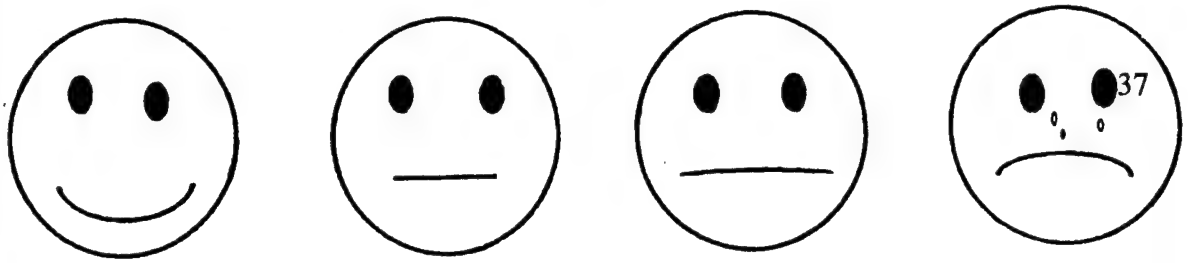
		Strongly Agree	Agree	Disagree	Strongly Disagree
B20A.	Feel that you're a person of worth, at least on an equal basis with others.	1	2	3	4
B20B.	Feel that you have a number of good qualities.	1	2	3	4
B20C.	All in all, feel that you are a failure.	1	2	3	4
B20D.	Feel you are able to do things as well as most other people.	1	2	3	4
B20E.	Feel you do not have much to be proud of.	1	2	3	4
B20F.	Take a positive attitude toward yourself.	1	2	3	4
B20G.	On the whole, feel satisfied with yourself.	1	2	3	4
B20H.	Wish you could have more respect for yourself.	1	2	3	4
B20I.	Feel useless at times.	1	2	3	4
B20j.	At times think you are no good at all.	1	2	3	4
B20K.	Feel like you have control over your life.	1	2	3	4

B20L. Did this interview bring up any concerns or questions that you would like to discuss with your prenatal care provider?

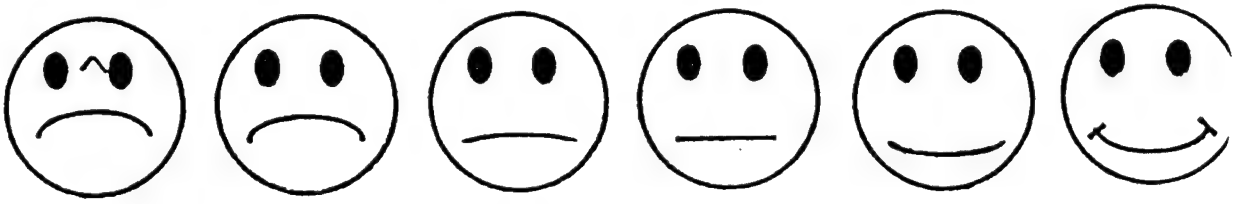
- ☐ 0. No
- ☐ 1. Yes

B20M. Would you like me to approach your prenatal care provider with this concern or question for you?

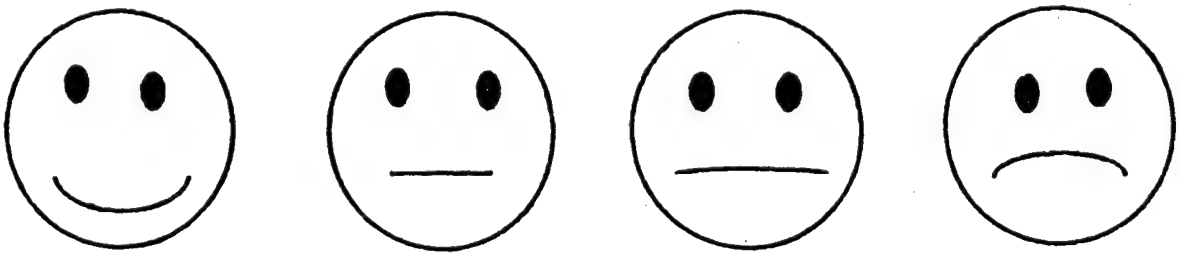
- ☐ 0. No
- ☐ 1. Yes



1 No Stress | 2 Some Stress | 3 Moderate Stress | 4 Severe Stress



1 Very Dissatisfied | 2 | 3 | 4 | 5 | 6 Very Satisfie



1 Strongly Agree | 2 Agree | 3 Disagree | 4 Strongly Disagree

APPENDIX G

PROGRAM AGENDA

Assess the Stress: Optimizing Perinatal Outcomes

01 June 2002

Time	AGENDA	SPEAKER
0715-0800	Registration/Welcome/Breakfast Pre-Program Questionnaire	Maj Gold
0800-0830	*Mom You're Stressing Me Out!* Physiological Effects of Stress In Pregnancy	Lt Col Silver
0830-0900	*What's the Big Deal?* Impact of Stress on Perinatal Outcomes	Lt Col Silver
0900-0915	Break	
0915-0945	*So, What's Been Done About It?* Literature Review/Research Studies	Lt Col Silver
0945-1015	*Get Connected* Protective Benefits of Social Support	Capt Bronze
1015-1045	*No Two Women Are Alike* Cultural Considerations and Social Support	Capt Bronze
1045-1100	Break	
1100-1130	*Determining Perinatal Risk* The Prenatal Psychosocial Profile (PPP)	Maj Copper
1130-1200	*Are You Ready For a Change?* Utilization of PPP @ WHMC	Maj Copper
1200-1245	Lunch	
1245-1315	*Did We Make a Difference?* Evaluating Benefits of Psychosocial Risk Assessment	Maj Copper
1315-1345	*Pulling It Together* Case Studies	Capt Bronze
1345-1415	*Wrap Up* Discussion/Questions	Maj Gold
1415-1430	Post-Program Questionnaire/Evaluation CEU/CME Certificate – 4.5 hours	Maj Gold

APPENDIX H

PROGRAM BUDGET

Assess the Stress: Program Budget

Expected number of participants = 50-60 providers

	Cost
Personnel	
Program Coordinator (1) x 80 hours	No cost / Salaried
Assistant Coordinator (2) x 40 hours	No cost / Salaried
Speakers (4) x 20 hours each (Prep & Program)	No cost / Salaried
	0.00
Facilities / Equipment	
Wilford Hall Medical Center Auditorium	No cost / Military Hospital
Audiovisual Equipment	No cost / Non Medical Supply
	0.00
Material / Supplies	
Folders 60 @ .20 each	No cost / Non Medical Supply
Copying Costs 1200 @ .07 each	No cost / Military Rapid Repro
Agenda (60)	
Course Objectives (60)	
Pre-Questionnaire (60)	
Post-Questionnaire (60)	
Program Evaluation @ 2 pages (120)	
Psychosocial Risk Algorithm (60)	
Psychosocial Perinatal Risk Identification Worksheet (60)	
Reference List @ 4 pages x 60 (240)	
Resources @ 2 pages x 60 (120)	
Referral List @ 2 pages x 60 (120)	
Prenatal Psychosocial Profile @ 4 pages x 60 (240)	
Pencils & Paper	No cost / Savage Labs Donation
	0.00
Food	
Breakfast	150.00
Lunch	No cost / Savage Labs Donation
	150.00
TOTAL COST:	**$150.00**

*** This budget is the actual monetary cost of the program and does not account for the cost of Clinic closure for training purposes, the cost of missed client appointments, nor the salaries of the providers in attendance.**

APPENDIX I

PSYCHOSOCIAL RISK IDENTIFICATION WORKSHEET (PRIW)

Psychosocial Risk Identification Worksheet (PRIW)

(Check all boxes that apply and comment below)

Date:_____

☐ *Lack of Social Support/Family Function*
☐ Partner ☐ Mother ☐ Family ☐ Community ☐ Other:_____
Comments:_____

☐ *Perception of Stress*
☐ Life Events: Chronic ☐ Acute Events ☐ Daily Hassles ☐ High Stress ☐ Low Stress
Comments:_____

☐ *Anxiety*
☐ Increased State Anxiety ☐ Increased Trait Anxiety
Comments:_____

☐ *Depression*
☐ Present ☐ Past ☐ Hx Postpartum Depression
Comments:_____

☐ *Desire For/Acceptance of Pregnancy*
☐ Unintended ☐ Unwanted ☐ Unexpected
Comments:_____

☐ *Locus of Control (LOC)/Self-Efficacy/Disposition*
External LOC Pessimistic Negative Self Esteem Negative Body Image
Comments:_____

Additional Factors:
☐ *No Identification with Motherhood Role.* Comments:_____
☐ *No Preparation for Labor* Comments:_____
☐ *Prenatal Fear of Loss of Control in Labor.* Comments:_____
☐ *Prenatal Fear of Loss of Self Esteem in Labor.* Comments:_____
☐ *Late Entry to Care* _____*wks.* Comments:_____
☐ *Haphazard/Insufficient Prenatal Care.* Comments:_____
☐ *Smoking*:_____ ☐ *ETOH*:_____
☐ *Rx/OTC Medications*_____
☐ *Illicit Drug Use*_____
☐ *Inadequate Nutrition*_____
☐ *Inappropriate Weight Gain*_____
☐ *Sedentary Lifestyle*_____
☐ *No Seat Belt Usage*_____

*Comments:*_____
_____
_____
_____
_____

Client Identification Stamp

APPENDIX J

STRONGSTART PRENATAL VITAMIN INFORMATION SHEET

Start their day with a healthy dose of citrus flavored...

strongstart™

prenatal vitamin

- **Once-a-day dosing with outstanding GI tolerability**
- **Ideal for all stages of pregnancy—before, during and after**
- **14 essential vitamins and minerals**
  - **200 mg of calcium carbonate for bone-building benefits**
  - **1 mg of folic acid to help reduce neural tube defects[1]**
  - **29 mg of ferrous fumarate—better absorption means better tolerability[2]**

Available in

Chewable *pleasing orange flavor*

&

CAPLETS *citrus flavored caplets with docusate sodium*

nly

NG: Accidental overdose of iron-containing products is a leading of fatal poisoning in children under 6. Keep this product out of f children. In case of accidental overdose, call a doctor or poison center immediately.

escribing information on back.

References:
1. Centers for Disease Control and Prevention. Recommendations for use of folic acid to reduce number of spina bifida cases and other neural tube defects. *MMWR.* 1992;41:RR-14 2. Hillman RS. Hematopoietic agents: growth factors, minerals, and vitamins. In: Gilman AG, Rall TW, Nies AS, et al, eds. *Goodman and Gilman's The Pharmacological Basis of Therapeutics.* 8th ed. Elmsford, NY: Pergamon Press Inc; 1990:1277-1310.

CAPLETS

StrongStart™

Rx only

DESCRIPTION

CONTENTS: Each StrongStart™ Caplet, imprinted with Savage Laboratories logo 0343, contains:

Calcium (as calcium carbonate)	200 mg
Vitamin C (ascorbic acid)	100 mg
Iron (as ferrous fumarate)	29 mg
Docusate sodium	25 mg
Vitamin E (dl-α-tocopheryl acetate)	30 IU
Vitamin B_6 (pyridoxine HCl)	20 mg
Zinc (as zinc oxide)	20 mg
Vitamin B_3 (niacinamide)	15 mg
Vitamin B_5 (pantothenic acid as calcium pantothenate)	7 mg
Vitamin B_1 (thiamine mononitrate)	3 mg
Vitamin B_2 (riboflavin)	3 mg
Vitamin B_9 (folic acid)	1 mg
Vitamin B_{12} (cyanocobalamin)	12 mcg
Vitamin A (as betacarotene)	1,000 IU
Vitamin D (cholecalciferol)	400 IU

ACTIVE INGREDIENT: Each StrongStart™ Caplet contains 1 mg of folic acid (vitamin B_9).

INDICATIONS

StrongStart™ Caplets are indicated for vitamin and mineral dietary supplementation in women throughout their pregnancy and in the postnatal period for both lactating and non-lactating mothers. StrongStart™ Caplets can also be administered to improve the nutritional status of women prior to conception.

WARNING

The administration of folic acid alone is inadequate for the treatment of pernicious anemia and other megablastic anemias caused by vitamin B_{12} deficiency.

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WARNING: Accidental overdose of iron-containing products is a leading cause of fatal poisoning in children under 6. Keep this product out of reach of children. In case of accidental overdose, call a doctor or poison control center immediately.

PRECAUTIONS

General: Folic acid, in doses of 0.1 mg daily, may obscure pernicious anemia in that hematologic remission can occur while neurological manifestations remain progressive.

DOSAGE AND ADMINISTRATION

The usual dosage of StrongStart™ Caplets is one caplet daily, or as directed by a physician.

HOW SUPPLIED

NDC 0281-0343-53, bottle of 100
NDC 0281-0343-30, bottle of 30

Dispense StrongStart™ Caplets in a tight, light resistant container with a child resistant closure. Store StrongStart™ Caplets at controlled room temperature, 15° - 30° C (59° - 86° F). Avoid excessive heat 40° C (104° F). Avoid freezing.

Manufactured for:
SAVAGE LABORATORIES®
a division of Altana Inc.
Melville, New York 11747
Manufactured by:
Confab Laboratories
St. Hubert, Quebec, Canada J3Y 3X3

IF70343 R8/01

Chewable

StrongStart™

Rx only

IF70343 R8/01

DESCRIPTION

CONTENTS: Each StrongStart™ Chewable, imprinted with Savage Laboratories logo 0344, contains:

Calcium (as calcium carbonate)	200 mg
Vitamin C (ascorbic acid)	100 mg
Iron (as ferrous fumarate)	29 mg
Vitamin E (dl-α-tocopheryl acetate)	30 IU
Vitamin B_6 (pyridoxine HCl)	20 mg
Zinc (as zinc oxide)	20 mg
Vitamin B_3 (niacinamide)	15 mg
Vitamin B_5 (pantothenic acid as calcium pantothenate)	7 mg
Vitamin B_1 (thiamine mononitrate)	3 mg
Vitamin B_2 (riboflavin)	3 mg
Vitamin B_9 (folic acid)	1 mg
Vitamin B_{12} (cyanocobalamin)	12 mcg
Vitamin A (as betacarotene)	1,000 IU
Vitamin D (cholecalciferol)	400 IU

ACTIVE INGREDIENT: Each StrongStart™ Chewable contains 1 mg of folic acid (vitamin B_9).

INDICATIONS

StrongStart™ Chewables are indicated for vitamin and mineral dietary supplementation in women throughout their pregnancy and in the postnatal period for both lactating and non-lactating mothers. StrongStart™ Chewables can also be administered to improve the nutritional status of women prior to conception.

SCA0012

WARNING

The administration of folic acid alone is inadequate for the treatment of pernicious anemia and other megablastic anemias caused by vitamin B_{12} deficiency.

WARNING: Accidental overdose of iron-containing products is a leading cause of fatal poisoning in children under 6. Keep this product out of reach of children. In case of accidental overdose, call a doctor or poison control center immediately.

PRECAUTIONS

General: Folic acid, in doses of 0.1 mg daily, may obscure pernicious anemia in that hematologic remission can occur while neurological manifestations remain progressive.
Phenylketonurics: Contains Phenylalanine 6 mg Per Tablet.

DOSAGE AND ADMINISTRATION

The usual dosage of StrongStart™ Chewable is one chewable daily, or as directed by a physician.

HOW SUPPLIED

NDC 0281-0344-53, bottle of 100
NDC 0281-0344-30, bottle of 30

Dispense StrongStart™ Chewables in a tight, light resistant container with a child resistant closure. Store StrongStart™ Chewables at controlled room temperature, 15° - 30° C (59° - 86° F). Avoid excessive heat 40° C (104° F). Avoid freezing.

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IF70344 R8/01

Rev 8/01

APPENDIX K

CONTINUING EDUCATION PROGRAM CERTIFICATE

859th Medical Operations Squadron
Lackland AFB, TX

certifies

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has attended the following program:

Assess the Stress: Optimizing Perinatal Outcomes

At Wilford Hall Medical Center

1 June 2002

Pearl Gold, Major, USAF, NC
Program Coordinator

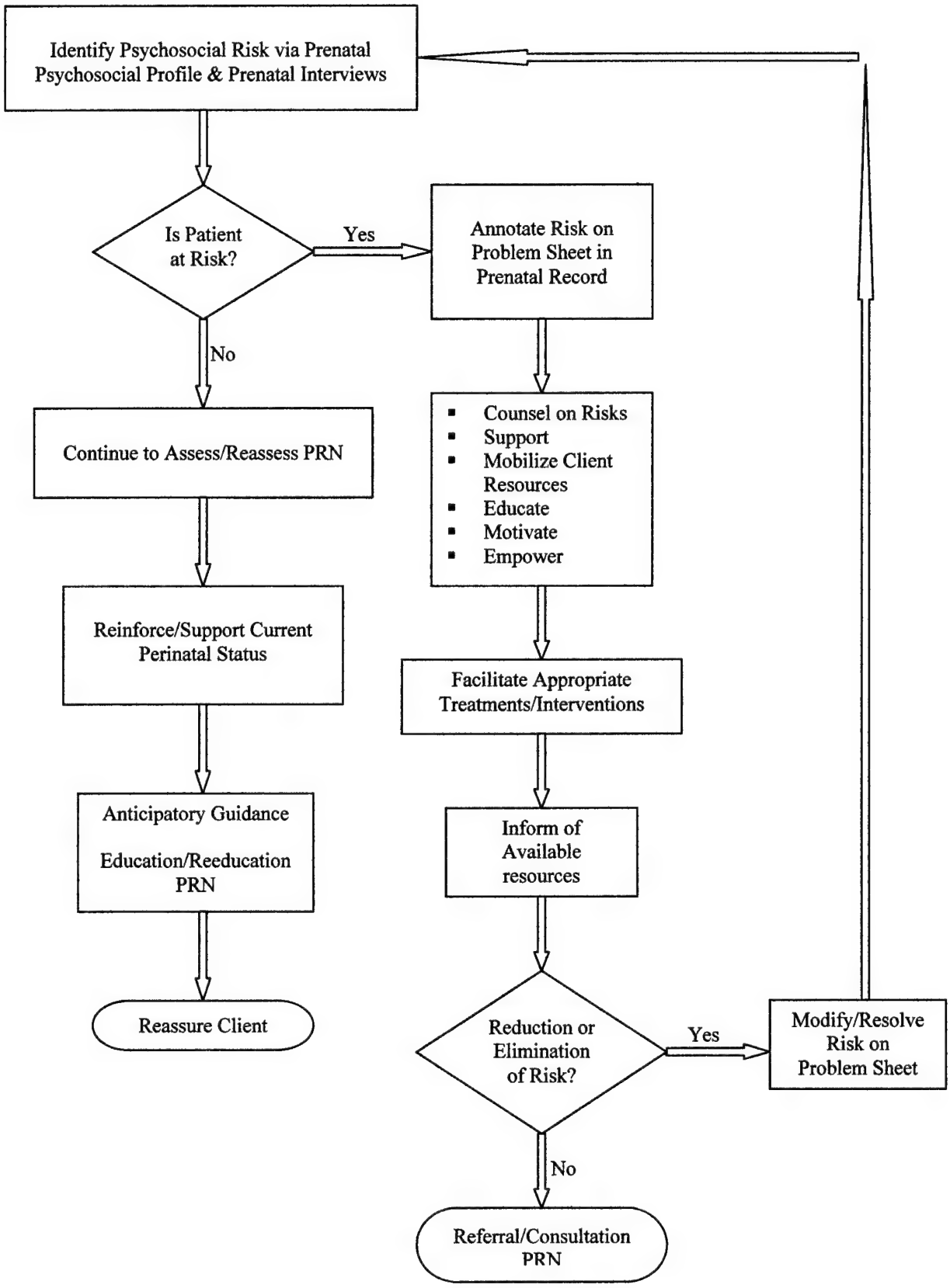
CEU/CME hours: 4.5

Approval Code XYXY

APPENDIX L

PSYCHOSOCIAL RISK ASSESSMENT ALGORITHM

PSYCHOSOCIAL RISK ASSESSMENT ALGORITHM



APPENDIX M

PRE-EVALUATION QUESTIONNAIRE

Assess the Stress: Optimizing Perinatal Outcomes

Pre-Evaluation Questionnaire

Please complete the following:	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. I understand the implications of stress and its effects on the body.	1	2	3	4	5
2. I am familiar with at least 10 psychosocial risks to pregnancy.	1	2	3	4	5
3. I feel psychosocial risk assessment can improve outcomes for the mother and fetus.	1	2	3	4	5
4. I feel there is a way to assess psychosocial risk easily and effectively.	1	2	3	4	5
5. I routinely assess clients for psychosocial risk.	1	2	3	4	5
6. I am culturally sensitive to the variations to consider during prenatal assessments.	1	2	3	4	5
7. I know what interventions/resources are available to suggest to reduce stress.	1	2	3	4	5
8. I know when to refer clients if initial intervention is unsuccessful.	1	2	3	4	5
9. I feel that psychosocial risk assessment is an important component in prenatal care.	1	2	3	4	5
10. I am attending this program because I feel it will help me in clinical practice.	1	2	3	4	5

Comments:_____

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Thank You!

APPENDIX N

POST-EVALUATION QUESTIONNAIRE

Assess the Stress: Optimizing Perinatal Outcomes

Post-Evaluation Questionnaire

Please complete the following:	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. I have a greater appreciation for the effects of stress on the body.	1	2	3	4	5
2. I can identify 10 or more psychosocial risks to pregnancy.	1	2	3	4	5
3. I feel psychosocial risk assessment can significantly improve perinatal outcomes.	1	2	3	4	5
4. I feel the Prenatal Psychosocial Profile will assess the stress easily and effectively.	1	2	3	4	5
5. I feel the Psychosocial Risk Identification Worksheet will be a concise tool to list Psychosocial risk.	1	2	3	4	5
6. I will routinely assess clients for psychosocial risk.	1	2	3	4	5
7. I have an increased awareness of cultural considerations when assessing clients.	1	2	3	4	5
8. I have increased my intervention/resource/referral strategies as a result of this program.	1	2	3	4	5
9. I feel that psychosocial risk assessment is an important component in prenatal care.	1	2	3	4	5
10. I am glad I attended this program.	1	2	3	4	5

Comments:_____

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Thank You!

APPENDIX O

PROGRAM EVALUATION

Assess the Stress: Optimizing Perinatal Outcomes

Program Evaluation

Please complete the following:	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
Speaker: Lt Col Silver					
1. Clearly stated the physiology of stress and its effects on the body.	1	2	3	4	5
2. Clearly explained the impact of stress on perinatal outcomes.	1	2	3	4	5
3. Clearly cited relevant literature in support of psychosocial variables affecting perinatal outcomes.	1	2	3	4	5
4. Teaching style was conducive to learning.	1	2	3	4	5
5. Questions/Discussion were encouraged.	1	2	3	4	5

Comments:_____

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Speaker: Capt Bronze					
1. Clearly cited relevant literature affirming the protective benefits of social support on perinatal outcomes.	1	2	3	4	5
2. Clearly discussed cultural variations and their impact on psychosocial variables.	1	2	3	4	5
3. Case studies were helpful with integration of psychosocial risk assessment.	1	2	3	4	5
4. Teaching style was conducive to learning.	1	2	3	4	5
5. Questions/Discussion were encouraged.	1	2	3	4	5

Comments:_____

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Speaker: Major Copper					
1. Clearly introduced the Prenatal Psychosocial Profile (PPP) as a research and Assessment tool to determine perinatal risk.	1	2	3	4	5
2. Clearly explained the utilization of the PPP for use at Wilford Hall Medical Center.	1	2	3	4	5
3. Clearly outlined the process of psychosocial risk assessment implementation.	1	2	3	4	5

4. Teaching style was conducive to learning.	1	2	3	4	5
5.Questions/Discussion were encouraged.	1	2	3	4	5

Comments:_____

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Facility:

1. The facility was appropriate.	1	2	3	4	5
2. Audiovisuals helped to enhance presentations.	1	2	3	4	5

Comments:_____

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Program:

1. The program was beneficial in increasing my awareness of psychosocial risks.	1	2	3	4	5
2. The program helped detail the process of implementing psychosocial risk assessment.	1	2	3	4	5
3. The time allotted was appropriate.	1	2	3	4	5

4. The most beneficial aspect of the program:_____

5. The least relevant aspect of the program:_____

Comments:_____

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Thank You!

APPENDIX P

12 MONTH POST-EVALUATION QUESTIONNAIRE

Assess the Stress: Optimizing Perinatal Outcomes

12 Month Post-Evaluation Questionnaire

Please complete the following and return no later than 1 June 2003. (POC: Major Gold)	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
Prenatal Psychosocial Profile (PPP)					
1. The PPP is a useful tool in determining pregnancy risk.	1	2	3	4	5
2. The PPP is easy to administer.	1	2	3	4	5
3. The PPP guides my discussions during client encounters.	1	2	3	4	5
Prenatal Risk Identification Worksheet (PRIW)					
1. The PRIW is a useful tool in detailing psychosocial risk.	1	2	3	4	5
2. The PRIW is easy to complete	1	2	3	4	5
3. I use the PRIW on a regular basis.	1	2	3	4	5
Psychosocial Risk Assessment (PRA)					
1. PRA is a beneficial addition to clinical practice.	1	2	3	4	5
2. PRA has aided in increased identification of pregnancy risks.	1	2	3	4	5
3. PRA has improved perinatal outcomes in my practice.	1	2	3	4	5
4. We should continue performing PRA.	1	2	3	4	5
5. PRA awareness and training should be extended to other military medical facilities.	1	2	3	4	5

Comments:_____

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Thank You!